## Remarks

Claims 1-21 are pending. Claims 1, 2, 5-8, 11-13, 16-18, and 21 are rejected. Claims 3, 4, 9, 10, 14, 15, 19, and 20 are objected to. Applicants respectfully traverse the rejection and request allowance of claims 1-21.

Applicants gratefully acknowledge the allowability of claims 3, 4, 9, 10, 14, 15, 19, and 20.

Claims 1, 2, 5-8, 11-13, 16-18, and 21 stand rejected under 35 U.S.C. § 103(a) over U.S. Patent 6,491,421 (Rondeau). Applicants respectfully traverse the rejection.

The rejection is improperly and incorrectly made under 35 U.S.C. § 103(a) (obviousness). A 103(a) rejection is used wherein the prior art does not have all of the elements of the present claims. As a result, a 103(a) rejection is made using multiple prior art references or sources. Therefore, a 103(a) rejection implicitly does not render a claim to be unpatentable unless it is combined with other prior art. That is not done here. Consequently, the rejection is defective.

Independent claims 1 and 12 require determining a density of a proppant. The proppant density can be received from an operator, from a memory, or from another source (see page 9, lines 28-29). Independent claims 1 and 12 further require measuring a density of a base fluid with a Coriolis flow meter, measuring a density of a fracture fluid with the Coriolis flow meter, and determining an amount of the proppant in the fracture fluid based on the base fluid density measurement, the fracture fluid density measurement, and the density of the proppant. Advantageously, the fracture fluid can be mixed using a single Coriolis flow meter.

In contrast, Rondeau discloses a fluid mixing system wherein a water/base fluid is initially measured by a first flow meter 104 (see FIGS. 2 and 6). The added material, such as cement or proppant, is mixed with the water or base fluid in a mixing tub 114. A level sensor 120 and/or a load sensor 122 are used to provide an indication of the tank contents and any change in contents over time (see col. 3, lines 9-11). Rondeau states that additional flow meters can be provided for each separate supply of additives (see col. 2, lines 39-42). The final mixed product, whether it be a cement slurry or a fracture fluid, is measured at delivery by a flow meter 128 attached to an output 124 of the mixing tub 114. Alternatively, the output in Rondeau can comprise an output 124' taken from a recirculation pipe and passing through a flow meter 128'.

Rondeau does not disclose using a single Coriolis flowmeter for controlling a mixing process of a fracture fluid. Rondeau does not disclose using a single Coriolis flowmeter for controlling a mixing and dispensing process of a fracture fluid.

Rondeau does not teach measuring a slipstream of the fracture fluid during a mixing process of a fracture fluid. Rondeau has a slipstream conduit and recirculation pump 118, but does not teach or suggest a flow measuring device in the slipstream conduit (see FIGS. 2 and 6). As a result, Rondeau cannot create and mix a fracture fluid on the go, as in the present invention. Instead, Rondeau must add a volume of water, as measured by the first flow meter 104, add a measured amount of solid materials as measured by the level sensor 120 or the load sensor 122, and can only then determine a mixed fluid amount when the mixed fluid is dispensed through the second flow meter 128 or 128'. As a result, if the fracture fluid is improperly created it cannot be determined until the end product fracture fluid is delivered from the mixing system.

Rondeau discloses "using a measurement of the solid fraction of a fluid as it is being mixed to determine the ratio of the solid and liquid components added to the slurry" (see col. 2, lines 3-6). Rondeau therefore measures the amount of proppant before it is added to the base fluid. Rondeau does not need to later determine a proppant amount of a proppant that was added to the base fluid.

Rondeau does not disclose determining an amount of proppant in a fracture fluid from a base fluid density measurement, a fracture fluid (*i.e.*, total) density measurement, and a density of the proppant. The background of Rondeau discloses a prior art method that uses overall density measurements of a slurry as it is being mixed in order to achieve a density target *i.e.*, proppant is added until a measured fracture fluid density falls within a desired density range (see col. 1, lines 35-39). However, Rondeau does not disclose determining a proppant density.

Independent claims 1 and 12 therefore include features that are neither taught nor suggested by Rondeau. Claims 2, 5-8, 11, 13, 16-18 and 21 are allowable for the same reasons as claims 1 and 12.

Applicants submit that there are numerous additional reasons in support of patentability, but that such reasons are moot in light of the above remarks and are omitted in the interests of brevity. Applicants respectfully request allowance of claims 1-21.

Please feel free to call me to discuss the patentability of the pending claims.

Date: 1/25/07

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